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ABSTRACT

Students within certain seniority levels of a nursing program were studied to assess the influence of educational evaluation on student effort. The subjects were 114 students from a baccalaureate nursing program in the San Francisco Bay Area, California. Focus was on understanding two perspectives of how evaluations within a nursing education program might shape nurses' skill development and professional competence by directing effort to their professional work. The study analyzed the students' perceptions of evaluations and reported effort for each of four work dimensions: (1) technical; (2) psychosocial; (3) planning; and (4) collaboration. Data were gathered via a questionnaire on the subjects' perception of evaluation influence and validity and the nature of the instructor's rating for each of the four work categories. A second stage included interviews that probed issues of interpretation or illuminated findings from the survey data with a sub-sample of volunteers. Results indicate that: (1) students perceiving relatively greater rewards or penalties from psychosocial work and/or perceiving relatively sound and important evaluations also report higher levels of effort toward psychosocial activities; (2) overall, direct and indirect effects of the organizational evaluation system can be seen for both perceived work importance and effort; and (3) effort was predicted by sanctions for activities, evaluation soundness, and activities' perceived importance. Seven tables are included. (TJH)

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Alternative Images of Professional Socialization: Controls, Roles, and Student Effort

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April 6, 1988

New Orleans

Coleen R. Saylor

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Alternative Images of Professional Socialization: Controls, Roles, & Student Effort

Objective

This paper compares alternative theoretical perspectives on professional socialization as they may apply to individual development within a nursing education program. To accomplish this objective, the research examines one component of the professional socialization process--the influence of educational evaluation on student effort. Specifically, the research aims to understand two perspectives of how evaluations within a nursing education program might shape nurses' skill development and professional competence by directing effort to their professional work.

The research is motivated by an interest in improving strategies and practices of professional educators, resulting in improved educational experiences for students. This interest is salient for professional schools since they bear the responsibility of directing a student's effort toward appropriate study and application to develop competency in the full range of professional knowledge and skills. Yet, given apparently competing theoretical images and the lack of research to assess their relative merits or sequential relevance, the professional socialization literature does not offer unambiguous practical advice to professional educators.

Professional Socialization: Evaluation as Control

The professional socialization literature provides alternative images of how students in professional programs develop competence in various work domains. One emphasizes program standards and controls and portrays the student peer culture as a locus of socialization. Becker, Geer, Hughes, and Strauss (1961) presented this image in their study of medical students. This

study focused on the students' direction and level of effort. The researchers asked how students decided what to study and how much to study in the face of overwhelming assignments. Apparently, the group culture, emerging from a consensus of individual perspectives rather than those of the instructors, determined the effort a student should put forth to be successful. The notion of a student perspective distinct from a professional perspective, called attention to the potential for program conditions to direct students' attention and effort, and offers an image of socialization as adaptive to organizational controls, a unique contribution of this early work.

Olesen and Whitaker (1968) studied nurses' socialization to assess the influence of the social context on their norms and behavior. Students clearly acted as agents rather than passive recipients. For example, student standards suggest what to study, and how to impress an instructor. As in Becker et al.'s study, the student norms controlled the effort a student should invest.

A second nursing socialization study (Simpson, 1979) identified the development of student "orientations" on the student's professional role enactment. She found that the clinical application of knowledge and skills was associated with changes in student orientations.

Dornbusch and Scott (1975) offer a theory of evaluation and authority which views evaluation processes in all types of organizations as sources of control over subordinates' views. This view suggests that evaluation practices within education programs influence the development of student perceptions, resulting in differential effort directed toward different aspects of one's work.

According to the theory, these perceptions result from conditions of evaluation and authority within the organization; that is, evaluations influence the perception of work and evaluation importance. The theory further indicates how evaluations influence performers' direction and level of effort by controlling these perceptions of importance. The perceptions of importance are primarily the consequence of two evaluation conditions--the perceived influence of evaluators over sanctions and the perceived soundness of evaluation.

Sanctions are rewards or penalties such as grades, praise, criticism, or job recommendations. The use of sanctions represents a form of power, and the ability to regulate them is influence. This influence becomes a control system as evaluators judge whether an individual's behavior meets normative criteria, and distribute sanctions accordingly. The theory defines evaluation soundness as the perception that effort and improved performance affect evaluations. In addition, sound evaluations are based on clear, appropriate, mutually held criteria. That is, if a student believes that working harder and doing better work results in a more favorable evaluation, the student will care more about that evaluation.

The preceding section presented one image of how evaluation practices may influence perceptions of the work being evaluated and the effort expended. However, this view leaves unanswered questions. The following section provides a second perspective.

Professional Socialization: Internalization of Standards

A role theory perspective provides a developmental view of students' conceptions of professional work over time, emphasizing effects of sustained interactions with important role models. A classic study of medical students

(Merton, Reader, & Kendall, 1957) stressed "learning the professional role of the physicians by combining knowledge, skill, attitudes, and values to be able to perform this role in a professionally and socially acceptable fashion" (p. 41).

These researchers viewed students as striving to meet the role expectations of the educators, and gradually coming to perceive themselves in accordance with these expectations (Huntington, 1957). This model presents a picture of a relatively even and gradual process as students acquire characteristics of their professional role models and become junior colleagues. This perspective expects internalization of standards, not simply compliance with program demands.

Fred Davis (1968) emphasized internalization of professional perspectives among student nurses. He described the students as gradually and uneventfully adopting the school's perspectives and standards.

This developmental view suggests seniority may be associated with changes in perceptions of the evaluation system as students develop confidence and internalize standards. Consistent with this view, a preliminary study found senior students more likely to identify patients or themselves as the most important evaluators, in contrast to juniors, who only identified instructors.

This study investigates the idea that more experienced students may learn to judge their professional work, rather than relying principally on instructors or hospital staff. Therefore, the organizational evaluator's influence may become relatively less important.

Control Variables

In addition to the study variables suggested by the literature on evaluation, the findings may also be affected by individual perceptions of

(a) competence, and (b) whether the evaluation is positive or negative.

Self-efficacy. Merton et al.'s study (1957) emphasized the importance of the student-physicians' increasing self-confidence as they perceived growing skill repertoires and dealt effectively with patients. The concept of "self-efficacy" refers to this phenomenon, the judgment of how well one can organize and execute a course of action required to deal with an unpredictable and stressful situation (Bandura, 1986, 1981).

Professional self-efficacy is not addressed by the evaluation theory, but may well influence perceived importance. For example, students believing they possess a specific work competency may be more likely to judge it as important. Reported self-efficacy provides the first control variable for the study.

Nature of instructor evaluation. Students may well perceive instructor praise and acknowledgement as more sound and important than negative evaluations. Therefore, the perceived nature of instructor's rating may be associated with evaluation importance or soundness and provides the second control variable for the study.

Figure 1 shows the important concepts and the expected relationships among the study variables according to the theory of evaluation and authority.

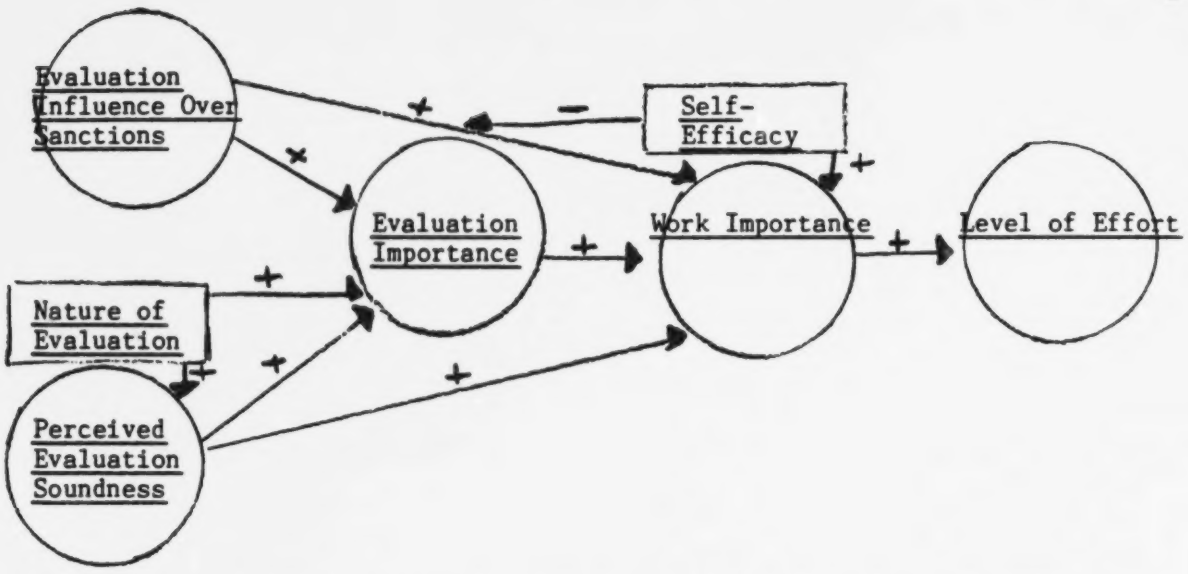

Figure 1. Conceptual Framework: Expected Relationships Among Variables

○ Evaluation and Authority Variables

□ Control Variables

Categories of Nursing

This study analyzes students' perceptions of evaluations and reported effort for each of four work dimensions. A preliminary field study combining observation and interviews of student nurses identified four broad categories of their work. These four categories encompass the activities nursing students perform as a requirement of their clinical experiences and evaluation.

Technical. This category includes individual, direct patient care activities with psychomotor behavior, e.g., giving medications, managing IVs, interpreting monitors, and assessing physical status.

Psychosocial. This category includes direct patient or family activities using psychological or social activities, e.g., teaching patients and families, counseling, practicing communication skills, and acknowledging cultural values.

Planning. This category includes individual, indirect activities in preparation for, or following patient care, e.g., record keeping, developing care plans, and managing time.

Collaboration. This category includes indirect activities relevant to resources beyond the individual nurse, e.g., using agency or community resources, and functioning effectively with nurses or other health care providers as a team member or leader.

Professional skill development and adequate subsequent performance generally requires substantial effort and the perception that all dimensions of nursing are important. If a nursing student reports relatively low effort directed toward any category, performance will be problematic, since this may not allow sufficient skill development and socialization.

This study emphasizes variables from both perspectives to suggest concrete evaluation practices. Specifically, this research examines students' evaluation experiences within one nursing program to assess their influence upon the effort directed to particular work dimensions.

Research Design

A survey research design tested the model suggested in Figure 1. The study sampled (a) one nursing program and (b) all of the students within certain seniority levels in order to obtain cases. The first stage of research used a questionnaire to obtain measures of each individual's perception of evaluation influence, evaluation soundness, work and evaluation importance, level of effort, self-efficacy, the nature of the instructor's rating for each of the four work categories. A second stage of the study used interviews designed to probe issues of interpretation or illuminate findings from the survey data with a subsamples of volunteers from the original sample.

The Sample

The sample consisted of 114 students from a baccalaureate nursing program in the San Francisco Bay Area. The demographic description of the sample is in Appendix A. Volunteers from three stages of the program, entry level, the first semester of the junior year, and the second semester of the senior year, completed the questionnaire.

Measurement

The survey questionnaire collected (a) demographic data, and measured (b) perceptions of the evaluation process with the variables--influence, soundness, evaluation and work importance, and effort, and (c) the control variables--self-efficacy and nature of instructor rating. Most of the questions measuring student perceptions regarding evaluation came directly from Dornbusch and Scott (1975) or subsequent research using the evaluation and authority theory. A 5-item self-efficacy index for each work category follows the model used by Bandura (1981) and others (LaFramboise, 1987) to measure this variable. A group of nursing students, similar to the study sample, pilot tested this study's questionnaire and provided feedback on the questions' clarity.

The measurement of most study variables involved two or more questions having a 5-point scale response. Indices formed from the addition of responses to these questions reduced the effects of measurement error associated with any single item and avoided problems of multicollinearity entailed in analyzing common items separately in a regression equation.

Data Analysis

The first phase of analysis summarized the data in terms of descriptive statistics. The next phase examined correlations among components of each

index and among measures of each variable. Some index components were eliminated on the basis of inadequate correlations with other components. The third phase of the quantitative analysis included multivariate analysis using regression analysis to allow for control of the possible confounding variables, self-efficacy, and the nature of the instructor rating, according to the general model in Figure 1. Path analysis, using successive regression analysis of the three dependent variables--effort, work importance, and evaluation importance--yielded estimates of direct and indirect effects of the evaluation variables in each of the four work categories. Seniority was coded as a dummy variable (1,0).

The next stage of the research analyzed responses to open-ended questionnaire items and interviews designed to pursue questions raised by results of the quantitative analysis. The responses to the open-ended questionnaire items, as well as follow-up interviews were analyzed using typological analysis (Goetz & LeCompte, 1984). That is, responses were disaggregated into categories using the conceptual framework as a guide.

Results

Evaluation as Control

In the interests of space, only the psychosocial and planning category are reported since these show typical effects of the evaluation system. Tables report regression results and path diagrams summarize these relationships, allowing one to observe direct and indirect effects.

Table 1 and Figure 2 report the statistically significant associations among these variables in the psychosocial domain. The model shows two separate routes for variable effects on effort, based inside and outside the evaluation system. The organizational evaluation variables--influence,

Table 1

Regression of Psychosocial Variables on Evaluation Variables and Relevant Control Variables (Zero-Order Correlation shown in first column)

Regression of Effort on Evaluation and Control Variables

		Full Equation			Parsimonious Equation		
	r	B	(b)	F	B	(b)	F
Work Importance	.43**	.33	(.66)	8.63**	.36	(.71)	11.24**
Evaluation Importance	.44**	.25	(.39)	3.83*	.31	(.47)	6.98**
Influence Over Sanctions	.39**	.20	(.52)	3.01*	.21	(.54)	3.14*
Soundly Based Evals	.28**	.11	(.05)	.82			
Self-Efficacy	.06						
Seniority	.06						
Nature of Rating	.28**	.11	(.36)	1.03			
Constant		3.31			4.89		
R2		.39			.37		
N		61			61		

Regression of Work Importance on Evaluation and Control Variables

		Full Equation			Parsimonious Equation		
	r	B	(b)	F	B	(b)	F
Evaluation Importance	.13	.08	(.06)	.27			
Influence Over Sanctions	.16*	.13	(.18)	.98			
Soundly Based Evals	.03	-.04	(-.01)	.07			
Self-Efficacy	.20**	.00	(.00)	.00			
Seniority	.31**	.26	(.67)	3.67*	.24	(.61)	3.54*
Nature of Rating	.31**	.21	(.34)	2.31	.24	(.38)	3.48*
Constant		4.71			5.53		
R2		.18			.15		
N		61			61		

Regression of Evaluation Importance on Evaluation and Control Variables

		Full Equation			Parsimonious Equation		
	r	B	(b)	F	B	(b)	F
Influence Over Sanctions	.43**	.34	(.57)	9.09**	.35	(.57)	9.61**
Soundly Based Evals	.44**	.35	(.11)	9.13**	.37	(.11)	10.99**
Self-Efficacy	.22**	.08	(.01)	.44			
Seniority	.08						
Nature of Rating	.15						
Constant		1.76			2.39		
R2		.32			.31		
N		61			61		

*$.05 < p \leq .10$
**$p \leq .05$

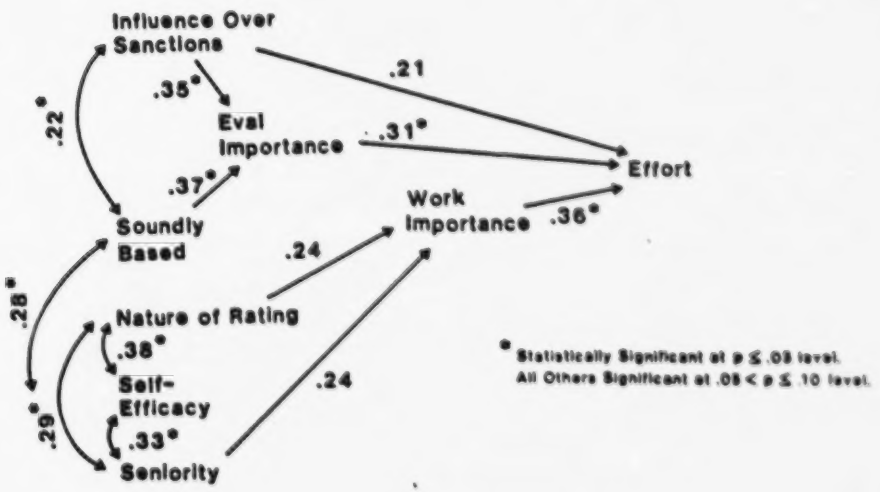

Figure 2

Aggregate Analysis - Psychosocial

soundly based evaluations, and evaluation importance--all show direct or indirect effects on effort. The other variables--self-efficacy, seniority, and nature of rating--also show direct or indirect effects on effort.

Students perceiving relatively greater rewards or penalties from psychosocial work and/or perceiving relatively sound and important evaluations report higher levels of effort toward psychosocial activities, such as counseling and patient teaching.

Table 2 and Figure 3 show the results in the planning domain. Overall, one can see the direct and indirect effects of the organizational evaluation system for both perceived work importance and effort. The evaluation variables, as well as seniority, predict reported levels of effort directed to planning activities. Effort is predicted by three variables, sanctions from these activities, their evaluation soundness, and the activities' perceived importance.

Interview results illuminate the criteria for sound evaluations and rewards which predict effort. Students' responses describe sound evaluations as (a) valid, (b) specific, and (c) instructive. "Just checking in doesn't really count." Students request specific feedback, rather than broad comments or vague praise. They request specific suggestions for improvement after the instructor has seen a valid sample of performance. The rewards identified by students were almost entirely intrinsic feelings of contribution, confidence, or accomplishment. Organizational rewards, such as grades, apparently play a minor role.

Table 2

Regression of Planning Variables on Evaluation Variables and Relevant Control Variables (Zero-Order Correlation shown in first column)

Regression of Effort on Evaluation and Control Variables

		Full Equation			Parsimonious Equation		
	r	B	(b)	F	B	(b)	F
Work Importance	.36**	.22	(.38)	4.63**	.25	(.43)	5.96**
Evaluation Importance	.46**	.16	(.22)	1.69			
Influence Over Sanctions	.57**	.41	(.89)	13.21**	.44	(.97)	17.16**
Soundly Based Evals	.48**	.18	(.08)	2.09	.24	(.11)	5.04**
Self-Efficacy	.26**	.02	(.00)	.05			
Seniority	-.01						
Nature of Rating	.12						
Constant		6.29			6.92		
R2		.47			.45		
N		61			61		

Regression of Work Importance on Evaluation and Control Variables

		Full Equation			Parsimonious Equation		
	r	B	(b)	F	B	(b)	F
Evaluation Importance	.27**	.23	(.19)	2.44	.32	(.26)	6.79**
Influence Over Sanctions	.12	.01	(.01)	.00			
Soundly Based Evals	.24**	.18	(.04)	1.37			
Self-Efficacy	.12						
Seniority	.21**	.29	(.76)	5.39**	.27	(.70)	4.79**
Nature of Rating	-.11						
Constant		2.89			3.63		
R2		.17			.15		
N		61			61		

Regression of Evaluation Importance on Evaluation and Control Variables

		Full Equation		
	r	B	(b)	F
Influence Over Sanctions	.36**	.18	(.27)	1.94
Soundly Based Evals	.53**	.44	(.14)	12.03**
Self-Efficacy	.19**	.01	(.00)	.00
Seniority	-.14			
Nature of Rating	.21**	.05	(.11)	.14
Constant		2.38		
R2		.31		
N		61		

*.05 < p ≤ .10
**p ≤ .05

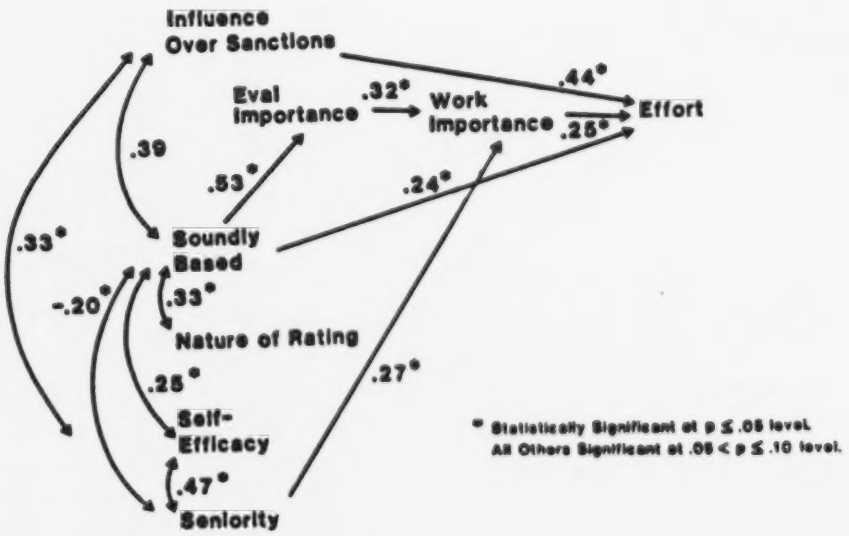

Figure 3

Aggregate Analysis-Planning

Internalization of Standards

The results also show effects of changes over time. Table 3 shows the increase of self-efficacy with seniority in each work category for juniors,

Table 3

Self-Efficacy Means and Standard Deviations for Each Seniority Sample

	Entry (N=44)	Junior (N=24)	Senior (N=46)
Technical	44.5 (25.1)[a]	75.5 (11.4)[b]	83.8 (12.5)
Psychosocial	53.8 (20.8)[a]	75.5 (12.5)[b]	83.5 (10.1)
Planning	41.3 (28.3)[a]	74.0 (14.1)[b]	87.2 (10.8)
Collaboration	58.4 (21.9)[a]	68.1 (17.4)[b]	82.4 (12.1)

Suprascripts indicate statistically significant differences using a Least Significant Differences procedure with ranges at .10 level following one-way ANOVA with F ratio significant at $p \leq .10$
[a] between entry and junior group
[b] between junior and senior group

seniors, and the entry level sample. In all categories, reports of self-efficacy show statistically significant increments. Table 4 shows the weaker relationship between an evaluation's influence and importance as self-efficacy increases. Statistically significant negative regression coefficients for the interaction terms in the planning and collaboration categories indicate a lower association between evaluation influence and importance for students with relatively higher self-efficacy scores. The interaction coefficients in the other categories show the expected negative direction, but are not statistically significant.

These results provide some support for the socialization image that the importance of the evaluation system declines as a student moves through the program and gains confidence in work performance.

Table 4

Regression of Evaluation Importance on Influence x Self-Efficacy Interaction Model

	Technical			Psychosocial			Planning			Collaboration		
	B	(b)	F	B	(b)	F	B	(b)	F	B	(b)	F
Self-Efficacy	.35	(.04)	.20	1.04	(.14)	3.22	1.14	(.12)	5.08*	1.54	(.16)	12.72*
Influence	.37	(.64)	.13	1.85	(3.03)	3.53	1.62	(2.48)	5.93*	1.81	(2.88)	11.70*
Self-Efficacy X Influence	-.11	(.00)	.01	-1.82	(-.03)	2.26	-1.92	(-.03)	4.08*	-2.48	(-.03)	9.55*
C	2.66			-6.27			-3.49			-5.62		
R2	.14			.23			.20			.28		
N	65			65			65			65		

* $P \leq .05$

Another example of the declining effect of the formal evaluation system can be seen in the students' rating of the relative importance of clinical and didactic feedback, both formal and informal in Table 5. Seniors rate their clinical, informal feedback from instructors as significantly more important than the formal, graded clinical evaluation. Although juniors also rated the evaluations in the same order of importances, differences were not statistically significant. That is, these seniors rate verbal and nonverbal feedback from instructors and preceptors in credit/no credit clinical teaching situations as significantly more important than formal classroom grades. This suggests a declining emphasis on organizational evaluation.

Table 5

Clinical and Didactic Evaluation Importance Means and Standard Deviations

	Clinical Evaluations		Didactic Evaluations		
	Formal	Informal	Formal	Informal	N
Entry	6.9(1.3)[b]	7.4(1.7)[de]	6.1(1.3)	6.2(1.6)	36
Junior	6.4(1.8)	7.0(1.1)	6.7(1.1)	6.2(1.4)	24
Senior	6.2(2.3)[a]	7.6(1.1)[de]	6.3(1.4)	5.7(1.5)	46
Instructors	7.5(1.1)[c]	7.6(1.8)[e]	5.8(1.5)	5.3(0.8)	13

Suprascripts indicate significant mean differences using a two-tailed t-test, $p \leq .01$

[a] between clinical formal and clinical informal
[b] between clinical formal and didactic formal
[c] between clinical formal and didactic informal
[d] between clinical informal and didactic formal
[e] between clinical informal and didactic informal

Interview results also offer evidence of differences between seniority cohorts' emphasis on evaluation system. For example, juniors describe their dependency on instructors for performance evaluation. One junior reported

that the instructor is "like a second pair of eyes and should know the standards." Several described relying on instructors to know if performance was adequate. "I'm not sure where the fences are, nor can I tell if I'm derailed." Seniors, able to make these judgments about themselves, describe reliance on instructors for suggestions for more effective performance rather than evaluation.

Descriptive analyses revealed that seniors' mean ratings of evaluation importance are lower than juniors in three of the four work categories, with the technical evaluation difference reaching statistical significance (Appendix A). Senior students explained this finding in the interviews by describing increased confidence and decreased importance of the educational program. They consistently identified self-evaluation as most salient, describing professional confidence to make performance judgments. Several described their own internalized standards as more critical than other evaluators. Five of the 10 seniors interviewed went on to describe their memories of the junior year as "needing feedback any way we could get it."

Summary

Study results support the argument that students' efforts are influenced by organizational evaluation conditions of influence over sanctions and evaluation soundness. In three of the four categories, evaluation variables show direct and indirect effects on reported effort. That is, students tend to report more effort when perceived sanctions, evaluation soundness, or evaluation importance is greater.

Open-ended interview questions gave students an opportunity to expand on their perceptions of sound evaluations. They identified validity, specificity, and clarity, as well as evaluations which list suggestions for improvement.

The study results also support the view that students gradually internalize professional standards, becoming autonomous and self-confident, not simply responding to organizational contingencies. In all four categories, self-efficacy increases with seniority and, in two categories, the relation of evaluation influence to evaluation importance diminishes. These results suggest that senior students, with higher levels of self-efficacy, form ratings of evaluation importance independent of perceived evaluation influence over sanctions.

Ratings of evaluation importance in three of the four categories decrease with seniority. This apparent devaluing of external evaluation is also reflected by interview responses in which less experienced students describe a high degree of dependency upon instructor feedback and little ability to make judgments independently. In contrast, seniors describe relatively autonomous, confident judgments about their work. These students report being relatively independent of external evaluation and depending principally on internalized decision-making standards.

This developmental view of professional education also emphasizes the importance of clinical experiences which provide the identity and confidence to feel like a professional. All seniority cohorts rated informal evaluations in clinical work more important than didactic grades. In addition, seniors found the informal clinical evaluation significantly more important than clinical formal grades. These results tend to support the view that clinical, hands-on experiences and the feedback from important role models enhance the development of professional identity and self-confidence.

Discussion

Results of this study support both views of professional education and suggest that they represent not competing perspectives, but complementary views which refer to different stages of the professional socialization process. Perhaps the organizational evaluation process provides one way in which professional students come to internalize standards over time. The results provide support for the view that the evaluation system directs effort. Students apparently respond with increased effort to valid, specific evaluations which encourage their growth. That is, through conditions of the evaluation process, students direct effort toward specific aspects of their profession.

However, with seniority and self-confidence comes increasing autonomy from the organization and its evaluation system. Seniors depend on role models and clinical experience to develop professional identity. In addition, seniors are more likely to describe internalized professional standards which enable them to be their own evaluators. Schon (1983, 1987) described a similar process used by a variety of professionals as "reflection-in-action." These seniors describe themselves as Davis (1968) described novice professionals: having a high level of confidence regarding professional expectations and, thus, becoming increasingly autonomous.

The two perspectives of professional socialization may represent processes appropriate to different sequences of professional development. During development in earlier stages, less confident students rely heavily on the evaluator and the evaluation system. Later, a more autonomous model is appropriate to describe development when students have more professional self-confidence and self-evaluation skills.

Implications for Professional Education

These results and interpretations suggest certain educational strategies for professional educators. These strategies fall into three categories: (a) desired evaluation characteristics, (b) seniority specific evaluation practices, and (c) the evaluation setting.

Evaluation characteristics. Vague praise and "just checking in" do not satisfy the educator's responsibility or encourage student effort. Students deserve and desire sound evaluations, described in detail earlier. Furthermore, sound evaluation apparently provides the principal method through which instructors direct student effort.

Seniority specific evaluation. Students with the least seniority express great dependence on instructors for performance evaluation. These instructors may well provide the beginning professional role expectations which will gradually be internalized. These students need confident, experienced role models with high professional standards who provide sound, specific evaluations.

Seniors, less influenced by the evaluation system, may best profit from strategies which encourage developing confidence and autonomy. Self-evaluations can be required and stressed as important. Small groups can learn to critique case studies using appropriate evaluation criteria, thus practicing the reflection-in-action process described by Schon (1987).

Evaluation setting. Educators may regard didactic classes and difficult examinations as the most valid indicator of achievement. Yet students report informal, clinical evaluation more important than didactic grades. Clinical performance is difficult to measure and impossible to standardize. Instructors often strive for more effective tools or checklists to evaluate performance, though students value ad hoc comments. Perhaps one-to-one interactions

with important professional role models provide standards and feedback no checklist can achieve. Perhaps clinical instructors can embrace the "art" of professional education--the nurturing, prodding, consoling mentor relationship never captured by a formal evaluation.

Suggestions for Further Study

The study should be replicated with a larger and more diverse sample. Other institutions, or those in other geographic regions, may provide different findings. Further, and most critical for evaluating evidence from this study, longitudinal data are required. The study was limited by cross-sectional data; observed differences between seniority cohorts can only suggest changes over time in the absence of longitudinal data.

Summary

Since professionals and semi-professionals exercise pervasive influence in modern society, an improved understanding of their socialization process is essential. Hopefully, these preliminary findings on professional education provide concrete education and evaluation strategies for professional educators as well as useful data for future investigators of professional socialization.

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Appendix A

Table A1

Demographic Description of the Sample

	Sophomore (N_1)	Junior (N_2)	Senior (N_3)	Combined Junior & Senior
Age				
Mean	26	27	27	27
Range	19-53	20-48	21-49	20-49
Sex				
Female	40 (91%)	23 (96%)	44 (96%)	67 (96%)
Male	4 (09%)	1 (04%)	2 (04%)	3 (04%)
Ethnicity				
Asian	7 (16%)	8 (33%)	5 (11%)	13 (19%)
Black	3 (07%)	1 (04%)	2 (04%)	2 (03%)
Caucasian	28 (64%)	13 (54%)	37 (80%)	50 (71%)
Hispanic	2 (04%)	2 (08%)	2 (04%)	4 (06%)
Other	4 (09%)	0 (00%)	1 (02%)	1 (01%)
Prior Experience				
None	11 (25%)	10 (42%)	12 (26%)	22 (31%)
Some*	30 (68%)	13 (54%)	31 (69%)	44 (63%)
Substantial**	3 (07%)	1 (04%)	2 (04%)	3 (05%)

*Some experience: Any experience with patients, e.g. hospital auxiliary, orderly, hospital technician, nursing assistant. This category also includes RNs and LVNs (Vocational Nurses) with less than 1 year's experience.

**Substantial experience: Registered Nurses or Vocational Nurses with at least 1 year of experience.

Table A2

Seniority Sample Means and Standard Deviations for Each Study Variable

Variable	Entry	Junior	Senior	Instructor
Effort*				
Technical		18.61 (1.1)	18.36 (1.8)	
Planning		16.60 (1.8)	16.52 (2.2)	
Psychosocial		15.82 (1.8)	16.11 (2.7)	
Collaboration		13.84 (2.6)[c]	15.37 (2.4)	
Work Importance+				
Technical	8.23 (1.1)	8.63 (0.9)[cd]	7.98 (1.3)	7.64 (1.4)
Planning	6.57 (1.2)[a]	5.79 (1.3)[cd]	6.35 (1.2)[e]	7.07 (1.1)
Psychosocial	7.23 (1.2)[b]	6.96 (1.2)[cd]	7.74 (1.1)	7.71 (1.2)
Collaboration	5.82 (0.9)	5.75 (1.6)	5.89 (1.3)	6.36 (1.4)
Evaluation Importance+				
Technical	8.59 (1.1)[b]	8.77 (1.1)[c]	7.77 (1.6)	
Planning	8.22 (1.4)[b]	8.17 (1.4)	7.61 (1.6)	
Psychosocial	8.43 (1.2)[ab]	7.75 (1.4)	7.48 (1.6)	
Collaboration	8.02 (1.4)[ab]	6.78 (1.7)	7.30 (1.6)	
Influence+				
Technical	4.73 (0.5)[b]	4.75 (0.4)[c]	4.33 (1.0)	
Planning	4.45 (0.6)[b]	4.33 (0.7)	4.05 (1.1)	
Psychosocial	4.61 (0.5)[ab]	4.17 (0.8)	3.98 (1.0)	
Collaboration	4.41 (0.7)[ab]	3.61 (1.0)	3.87 (1.0)	
Soundly Based*				
Technical		31.72 (4.9)[c]	28.09 (4.6)	
Planning		28.75 (5.6)[c]	26.71 (4.3)	
Psychosocial		25.97 (5.4)	25.16 (5.0)	
Collaboration		22.70 (6.2)[c]	24.82 (4.9)	
Nature of Rating*				
Technical		3.83 (0.6)	4.00 (0.6)	
Planning		3.83 (0.7)	3.81 (0.6)	
Psychosocial		3.73 (0.6)[c]	4.19 (0.8)	
Collaboration		3.50 (0.6)[c]	4.10 (0.7)	

Suprascripts indicate statistically significant mean differences using a
*two-tailed t-test $p \leq .10$ or
+LSD procedure with ranges = .10 following one-way ANOVA with F ratio $p \leq .10$

[a] difference between entry and junior cohort
[b] difference between entry and senior cohort
[c] difference between junior and senior cohort
[d] difference between junior and instructor cohort
[e] difference between senior and instructor cohort